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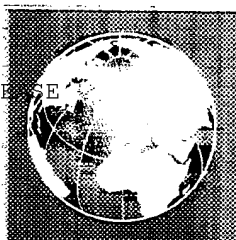
Directorate of Intelligence

PROLIFERATION DIGEST

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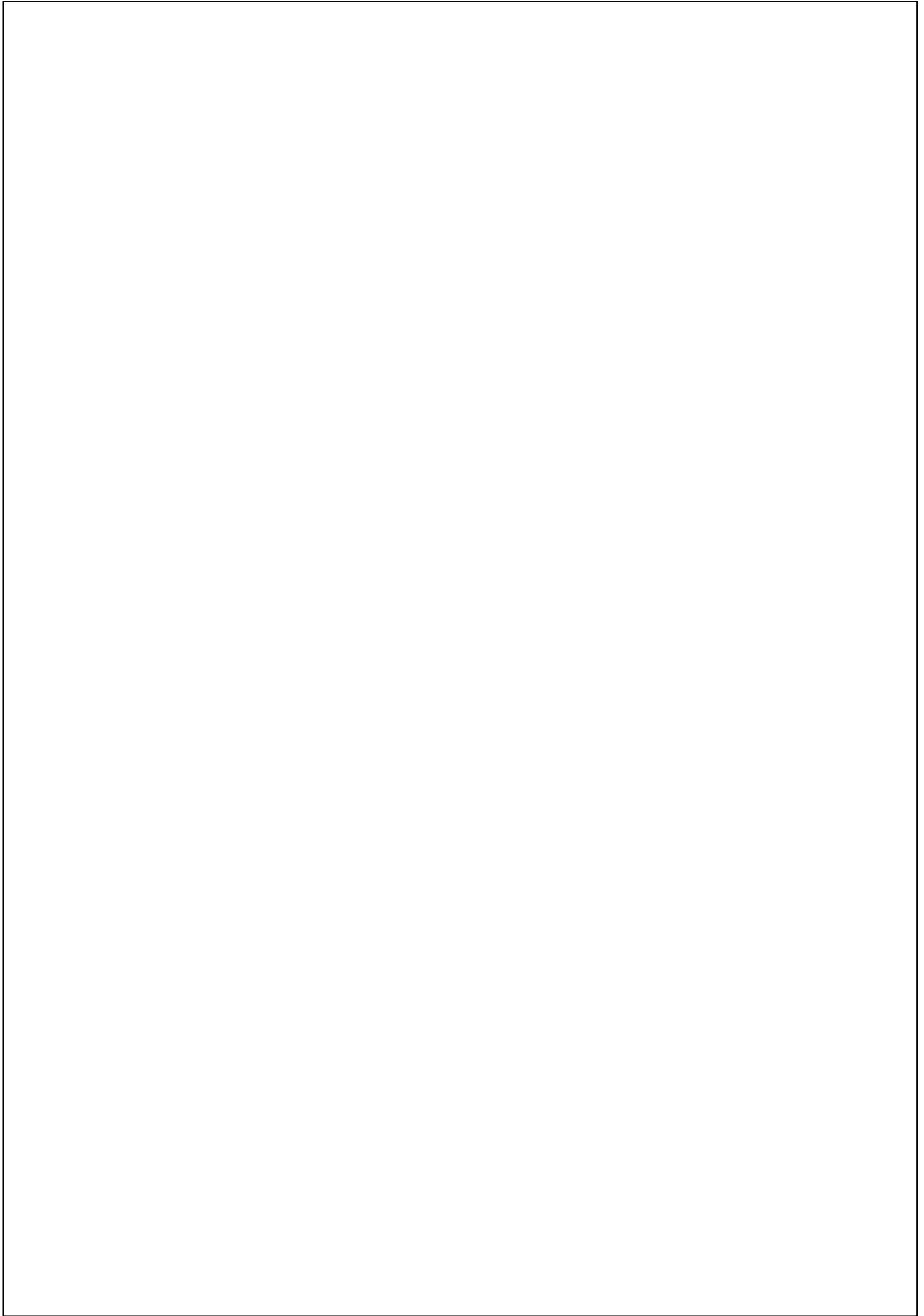
Perspective

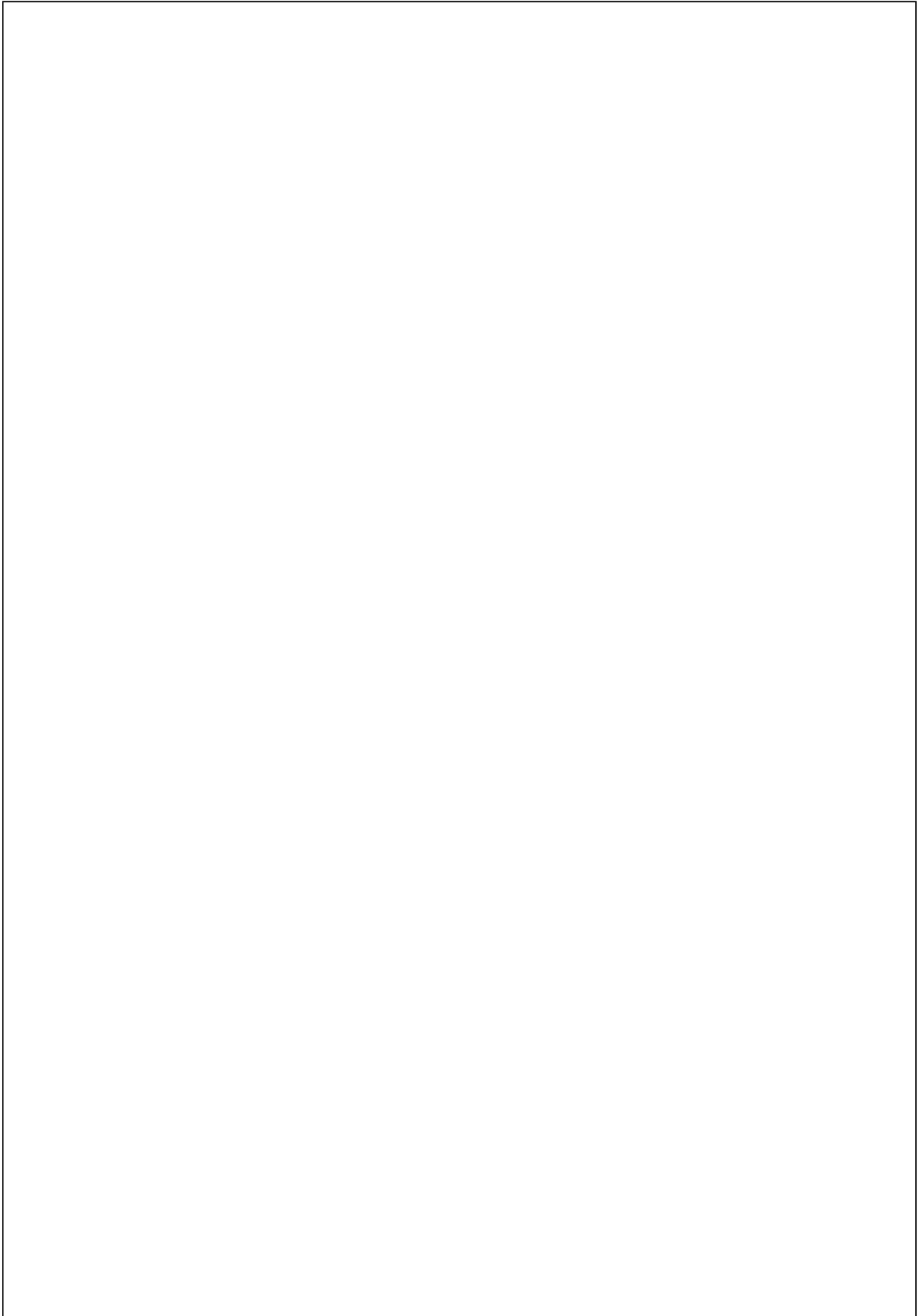
China Unlikely To Adjust Nuclear Export Behavior To Acquire Western Technology

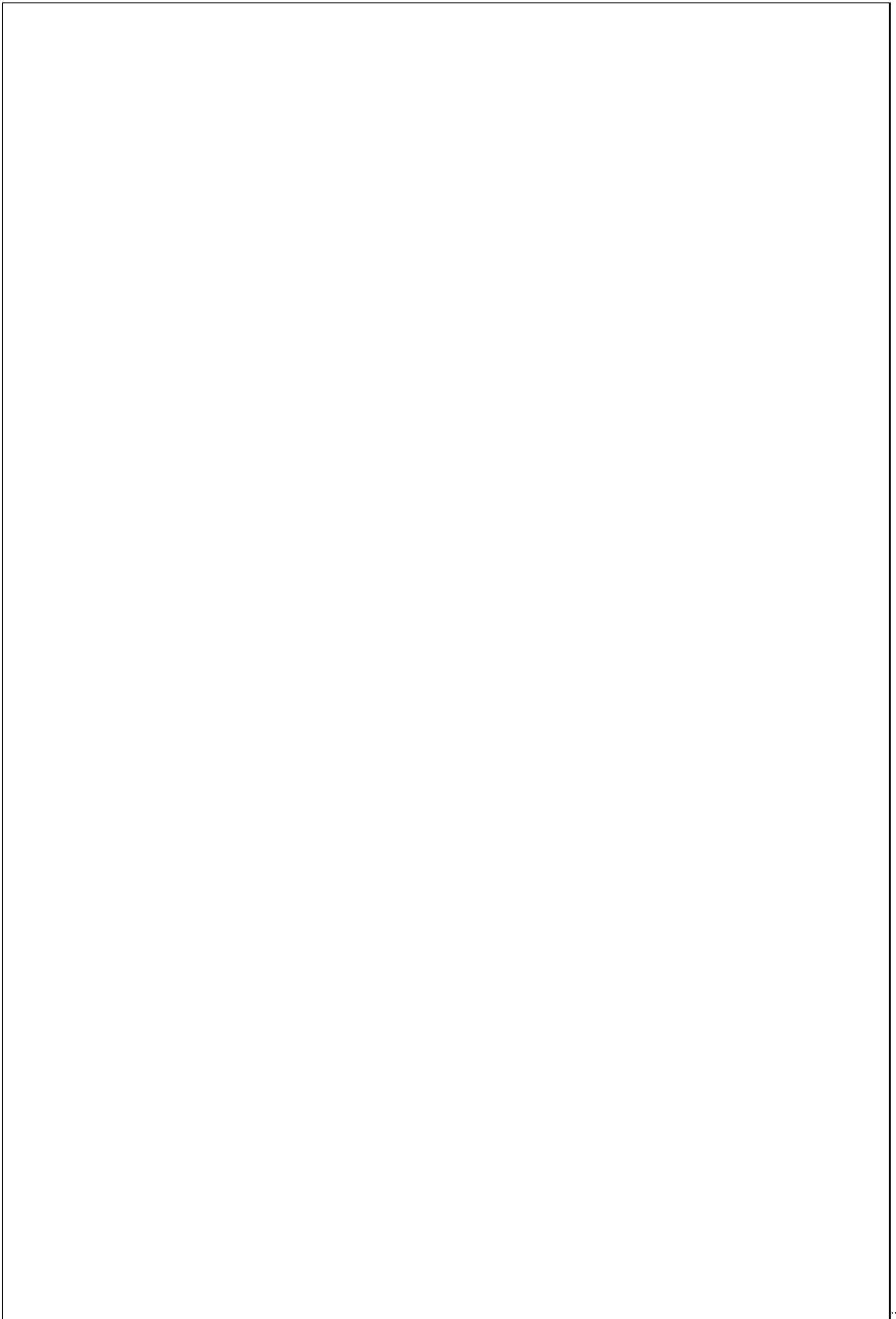
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Acquisition of major nuclear components and related production technology would help China's nuclear industry to boost electricity production from nuclear power and to sell nuclear power plants abroad—a key consideration given the increased importance of exports to the industry. Although Chinese officials recently have sent mixed signals on Beijing's willingness to curb nuclear cooperation with Iran in exchange for US nuclear technology, China is continuing to provide assistance to Iran's uranium conversion facility—a facility that probably is intended to support Iran's uranium enrichment project.

China is unlikely to halt its ongoing sensitive nuclear relationship with Pakistan in exchange for US nuclear cooperation.







Perspective

China Unlikely To Adjust Nuclear Export Behavior To Acquire Western Technology

Acquisition of major nuclear components and related production technology would help China's nuclear industry to boost electricity production from nuclear power and to sell nuclear power plants abroad—a key consideration given the increased importance of exports to the industry. Although Chinese officials recently have sent mixed signals on Beijing's willingness to curb nuclear cooperation with Iran in exchange for US nuclear technology, China is continuing to provide assistance to Iran's uranium conversion facility—a facility that probably is intended to support Iran's uranium enrichment project. [] China is unlikely to halt its ongoing sensitive nuclear relationship with Pakistan in exchange for US nuclear cooperation. []

China's Need for Imports of Nuclear Technology []

Despite extensive efforts by China's nuclear industry, the Chinese cannot yet manufacture key reactor parts, such as pressure vessels and steam generator tubes for 300-megawatt (MW) reactors, [] They face even greater difficulties in producing 600-MW or larger reactors, []

- [] the Chinese factory fabricating the pressure vessel for the 300-MW power reactor being built at Chasma, Pakistan, has been unable to weld the vessel without breaks. The "spot repairs" of these breaks probably will result in weak welds, a potential safety hazard.

- [] China is unable to produce the steam generator tubes and main coolant pumps for Chasma. [] maintained that China would obtain steam generator tubes from abroad, and [] the manufacture of main coolant pumps was still out of China's reach. []

China has been forced to seek parts from foreign suppliers, most of whom are members of the Nuclear Suppliers Group (NSG). The NSG, however, discourages the sale of key components—including pressure vessels and

China's Ambitious Plans for Nuclear Power []

Faced with a projected 15-to-20-percent shortfall in electrical power over the next decade, Chinese energy officials in 1994 announced plans to increase installed nuclear energy capacity from the present 2.1 gigawatts (GW) to at least 50 GW by 2020. Although China probably will not meet this ambitious goal—it is already somewhat behind schedule on its overall energy expansion plans—it is likely to greatly expand its nuclear power capacity:

- *China already has approved plans for construction of eight new nuclear power plants with a capacity of 17.8 GW, and another seven plants are in the planning stages, according to Chinese press* []
- *At least nine of these plants will be built by foreign firms—from France, Canada, Russia, and Germany—and smaller domestic industry plants will require substantial foreign input,* []

Chinese nuclear industry officials have said that their choice of supplier will depend primarily on the price and financing offered, []

[] *The French-built plant at Daya Bay, in Guangdong Province, was financed with the help of French Government loans, the China National Nuclear Corporation, the provincial power authority, and the electrical power utility in nearby Hong Kong.* []

coolant pumps—to countries, such as China, that do not require buyers to adhere to full-scope IAEA safeguards. As a result, China has had difficulty purchasing these components from abroad. China's success in obtaining or manufacturing these major parts probably will determine when—and possibly if—its nuclear power reactor project in Pakistan will be completed.

[]

Success in acquiring major nuclear components and/or the technology to produce them will help China's nuclear industry to boost electricity production from nuclear power (see inset) and to gain additional foreign customers—a key consideration given the increased importance of exports to the industry. [] China's State Council cut in half direct government funding to the China National Nuclear Corporation (CNNC) and directed R&D and production facilities to fund modernization through exports. In 1994, CNNC reported in the Chinese press that its profits continued to decrease despite increases in production. []